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(71)Applicant : KOMATSU ELECTRON METALS CO  
LTD

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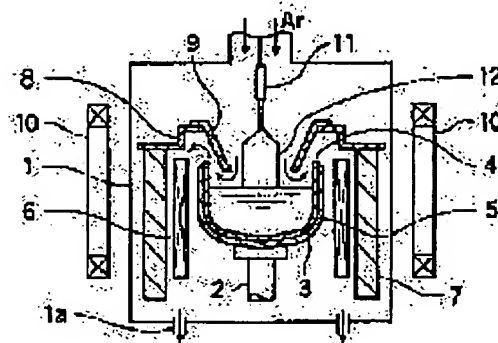
(72)Inventor : TOMIOKA JUNSUKE  
INAGAKI HIROSHI

(54) DEVICE FOR PRODUCING SINGLE CRYSTAL SILICON AND PRODUCTION OF SINGLE CRYSTAL SILICON, USING THE SAME

(57)Abstract:

PROBLEM TO BE SOLVED: To provide the device capable of stably producing single crystal silicon which has a  $\leq 10 \times 10^{17}$  atoms/cm<sup>3</sup> oxygen concn. and a uniform oxygen concn. in the axial direction and also to provide the production using the device, in the production of single crystal silicon by a CZ (Czochralski) method.

SOLUTION: This device is provided with coils 10 for applying a magnetic field and a hollow, inverted conical frustum-shaped or cylindrical gas purge tube 9 placed so as to encircle growing single crystal silicon 12. In this production using the device, a transverse magnetic field is applied to a melt 5 to inhibit any melt convection from occurring. Also, an inert gas such as gaseous Ar, passing through the space between the gas purge tube 9 and the melt 5, is used for promoting the discharge of SiO<sub>x</sub> evaporated from the melt 5. By a synergetic effect of these procedures, the concn. of oxygen incorporated into the single crystal silicon 12 can be reduced. Thus, the objective single crystal having an extremely low oxygen concn. and also, a uniform oxygen concn. in the axial direction can



be produced.

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